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# **HIGHER EDUCATION TEACHERS' PERCEPTIONS ABOUT TEACHING AND LEARNING RELATED QUALITIES OF TELEPRESENCE ROBOTS**

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# TELEPRESENCE ROBOTS



**Ava**  
by Ava Robotics



**Ohmni**  
by Ohmni Labs



**BeamPro**  
by Awabot



**Double 3**  
by Double Robotics



ITC Explorer  
Таллин, Эстония



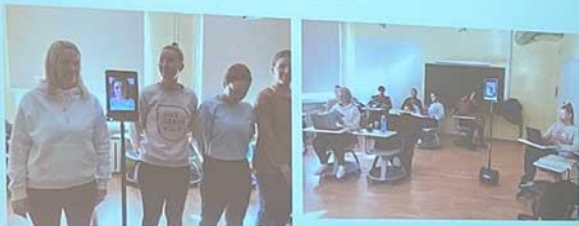
## RESEARCH QUESTIONS

- How do higher education teachers perceive the priorities of the features of a TP robot initially, and how does this perception change after a hand-on experience with a TP robot?
- What requirements are posed by higher education teachers on the environments and methods suitable for using TP robots?

## MATERIALS AND METHODS

- 15 participants university staff, 4 men and 11 woman
- Using Double 3 telepresence,
- 4-hour workshop:
  - Technology introduction,
  - Filling the questionnaire before the initial use of the robot,
  - Hands-on experience with the robot,
  - Mapping teaching methods and learning activities, involving telepresence robots,
  - Refilling the questionnaire.

## PILOTEERIMINE TALLINNA ÜLIKOOLIS



ÕPPES-TECH-METH uurimisgrupp <https://eduspace.tlu.ee/oppes/>

Teadusseminar "Tulevitehnoloogiad kõrghariduses" 20.04.22  
<https://youtu.be/Ppv9VhXZuFg>



# PRIORITY ORDER OF THE FEATURES OF THE TELEPRESENCE ROBOT

Pre-test order and values	Post-test order and values
<b>Moving around the room (8.3)</b>	<b>Moving around the room (9.2)</b>
Hearing (8.2)	Speaking (8.6)
Speaking (7.6)	Hearing (8.2)
<b>Reading text from paper (5.6)</b>	Looking down (5.9)
Keeping eye contact (5.3)	Keeping eye contact (5.1)
Looking down (5.2)	<b>Reading text from paper (4.5)</b>
<b>Finger-pointing (4.4)</b>	Picking-up items (3.9)
Opening doors (3.9)	Using stairs (3.7)
Picking-up items (3.3)	Opening doors (3.3)
Using stairs (3.2)	<b>Finger-pointing (2.7)</b>

## REQUIREMENTS FOR THE TEACHING ENVIRONMENT

- Lot of free space on the same level
- Easy access to charging points
- Reliable internet connection
- Good acoustics,
- Room layout where robot will not become an obstacle and people can easily move around the robot,
- Multimedia solutions must support the use of the robot
- Support person required



# TEACHING METHODS AND SOCIOCULTURAL ASPECTS

- Suitable:
  - pair work,
  - group work,
  - problem learning,
  - role play.
- Not suitable:
  - laboratories where manual work is required.

## CONCLUSION

- University teachers recognize the significant educational potential of TP robots,
- Identified requirements for the learning environment,
- Spotted main technological, functional, and design pitfalls that could jeopardize the usage of telepresence robots in education,
- Proposed teaching methods for activities, involving telepresence robots.

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